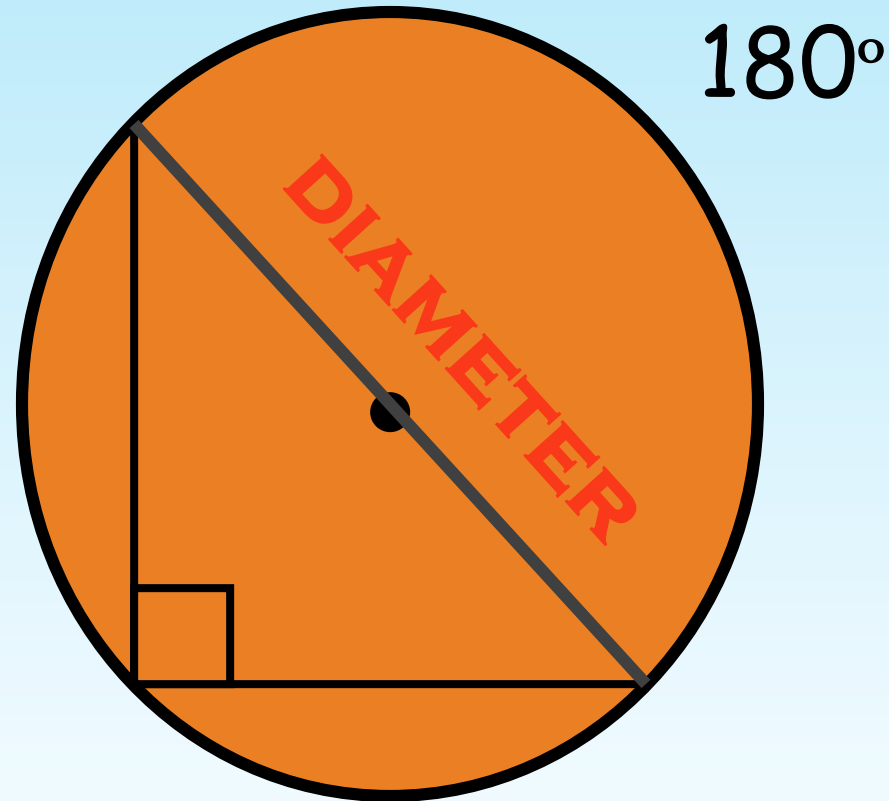


**If a right triangle is inscribed in a circle then the hypotenuse is the **diameter** of the circle**

**AND the angle opposite the diameter is a **right angle**.**

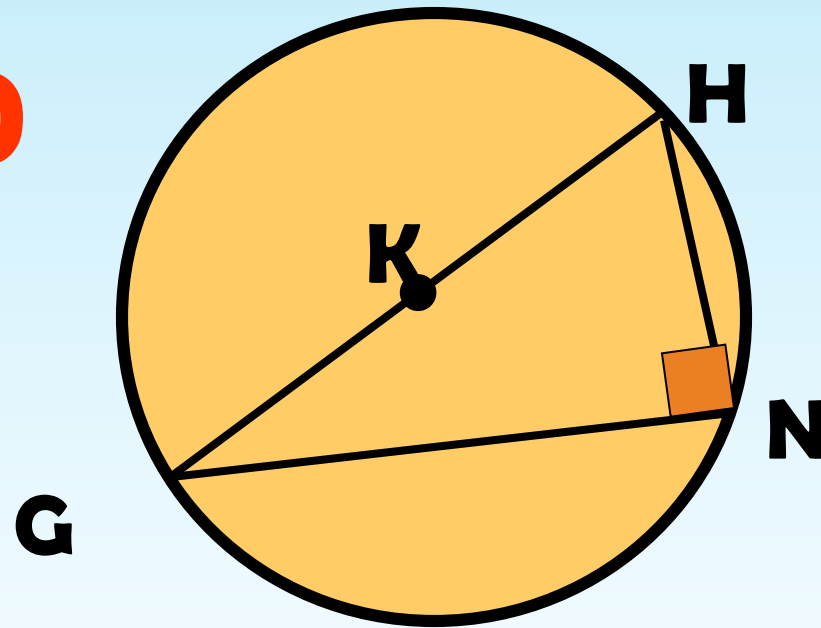


Example:

In  $\odot K$ ,  $\overline{GH}$  is a diameter and  $m\angle GNH = 4x - 14$ .  
Find the value of  $x$ .

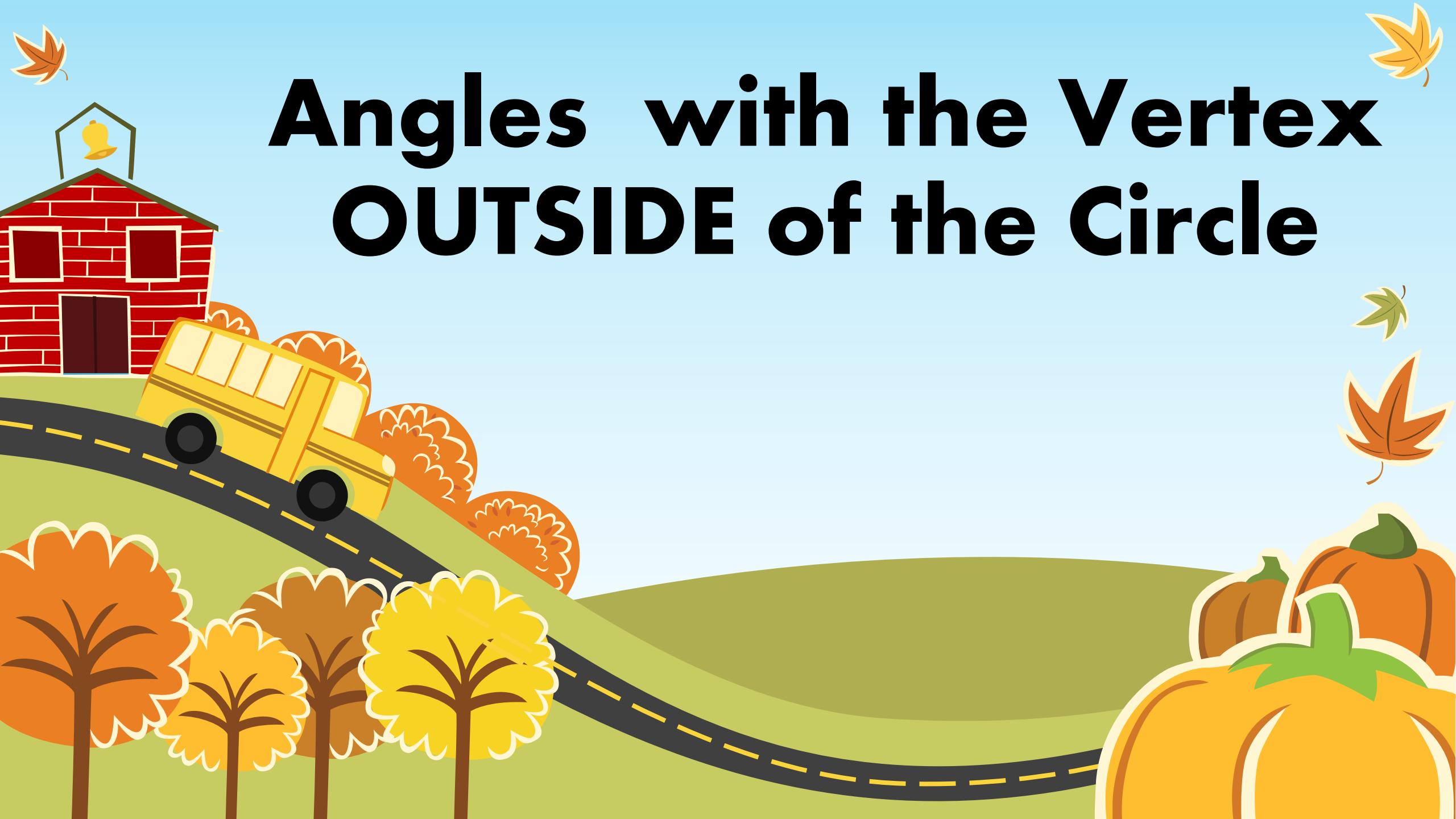
$$4x - 14 = 90$$

$$x = 26$$

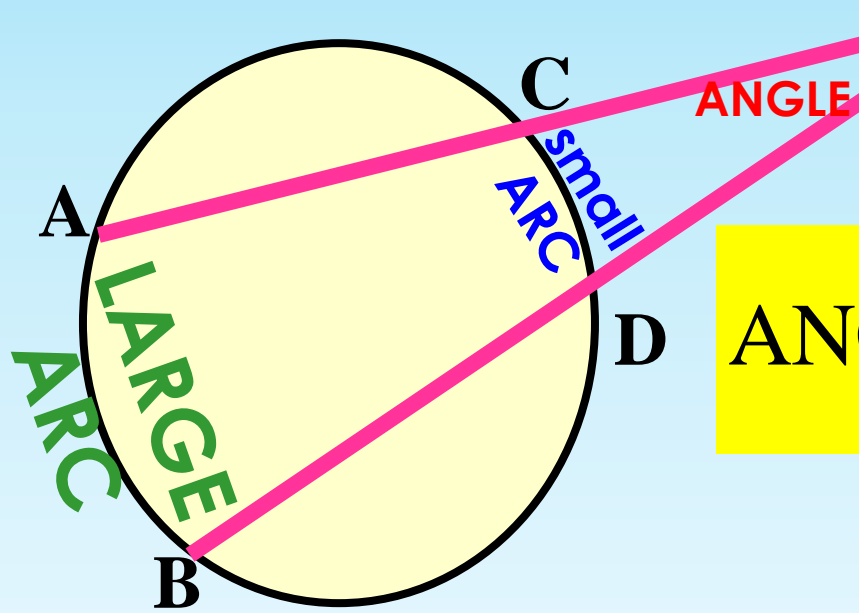


**HINT:** GH is also the hypotenuse.  
Therefore, angle GNH is a right angle.

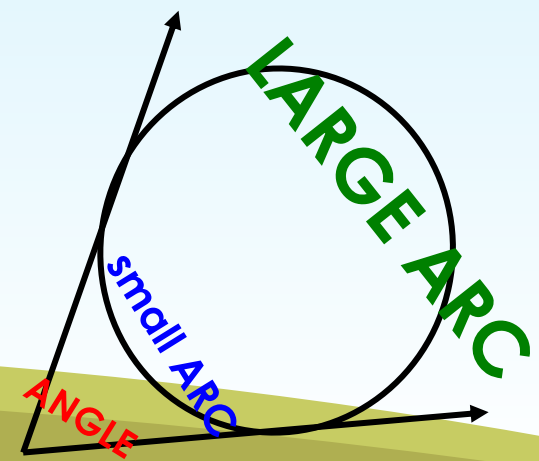
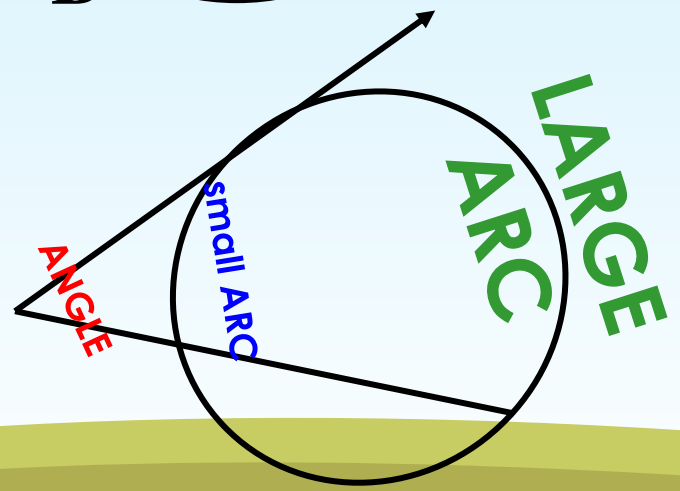
# Angles with the Vertex OUTSIDE of the Circle



# Case IV: Vertex is outside the circle

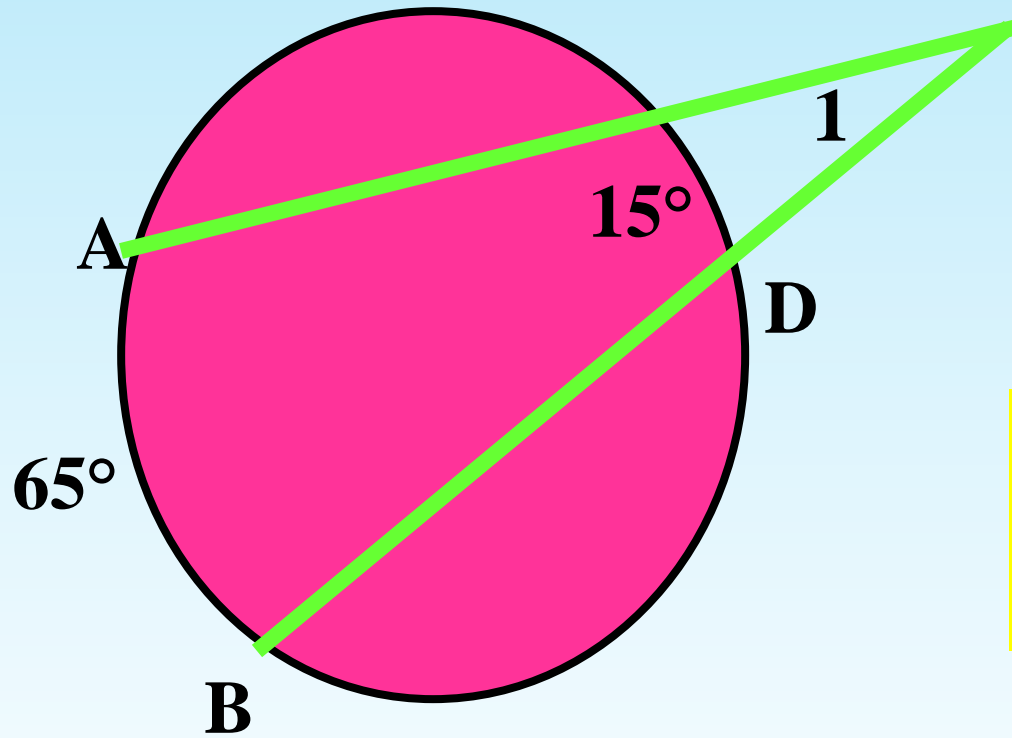


$$\text{ANGLE} = \frac{(\text{Large ARC} - \text{Small ARC})}{2}$$



Ex. 1: Find  $m\angle 1$ .

$$\text{ANGLE} = \frac{(\text{Large ARC} - \text{Small ARC})}{2}$$

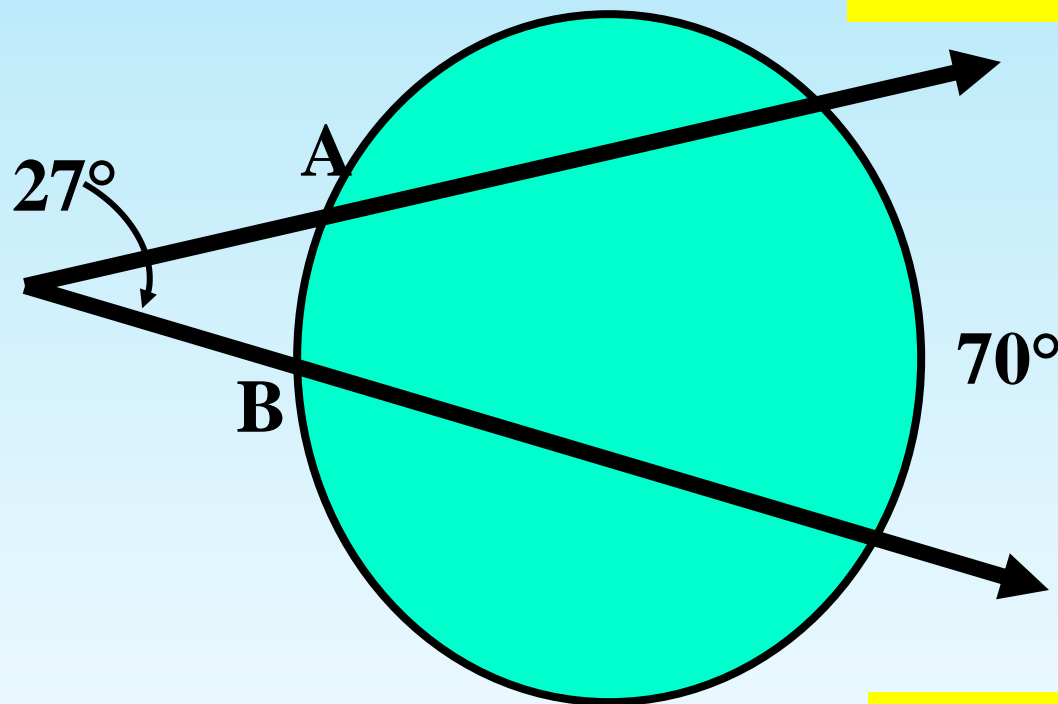


$$m\angle 1 = \frac{65 - 15}{2}$$

$$m\angle 1 = 25^\circ$$

Ex. 2: Find  $m\widehat{AB}$ .

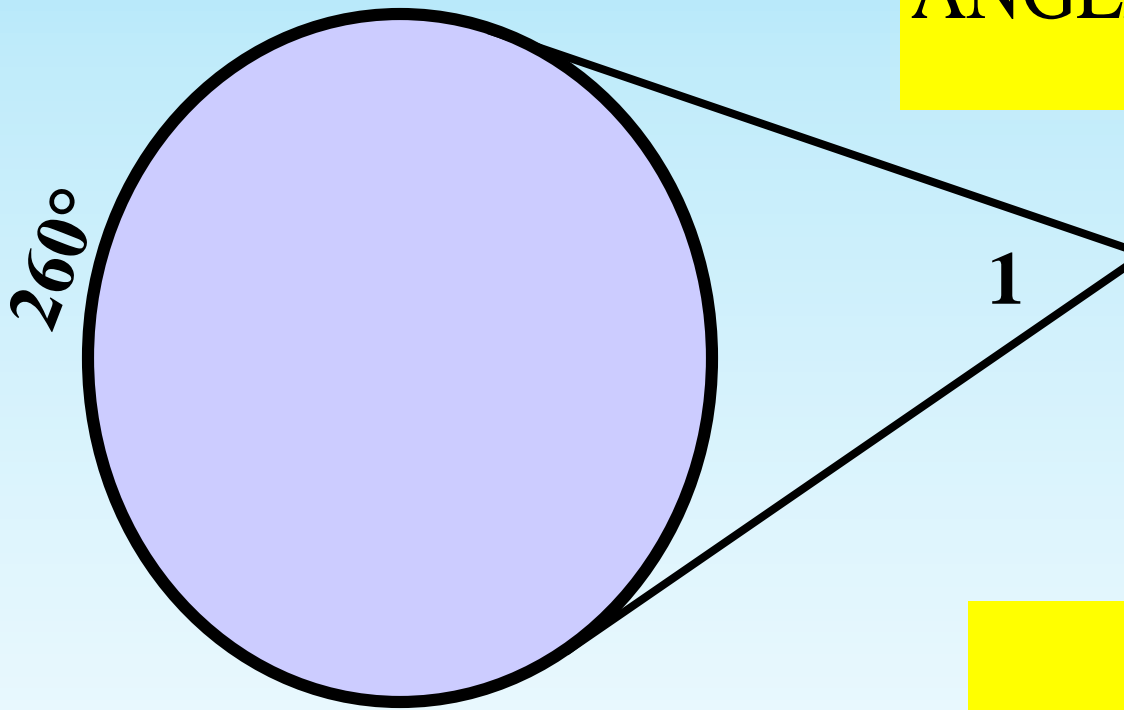
$$\text{ANGLE} = \frac{(\text{Large ARC} - \text{Small ARC})}{2}$$



$$27 = \frac{70 - AB}{2}$$

$$m\widehat{AB} = 16^\circ$$

Ex. 3: Find  $m\angle 1$ .



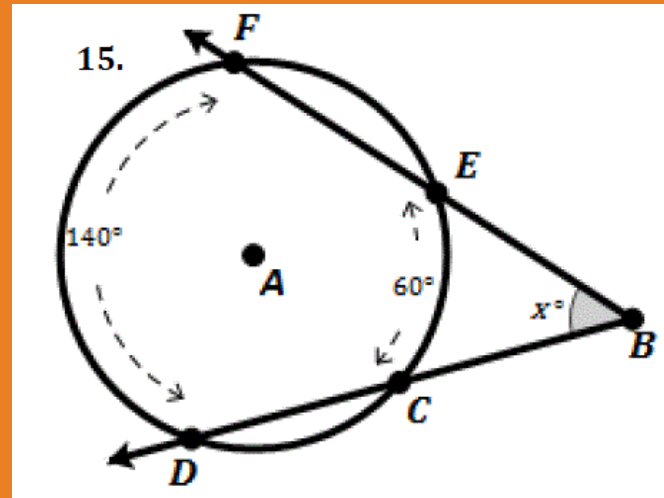
$$\text{ANGLE} = \frac{(\text{Large ARC} - \text{Small ARC})}{2}$$

$$m\angle 1 = \frac{260 - 100}{2}$$

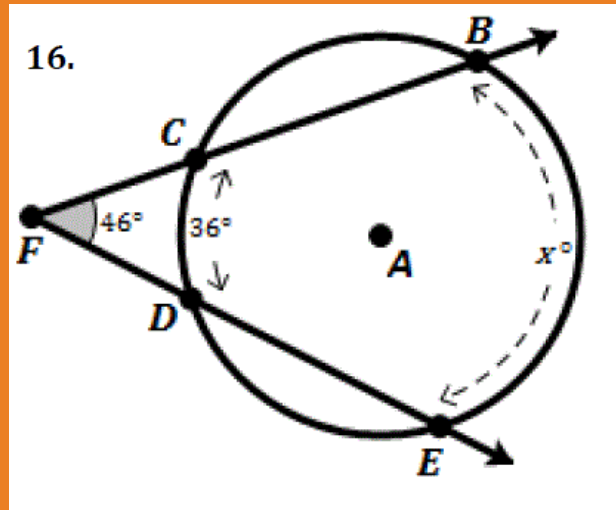
$$m\angle 1 = 80^\circ$$

# ON YOUR OWN

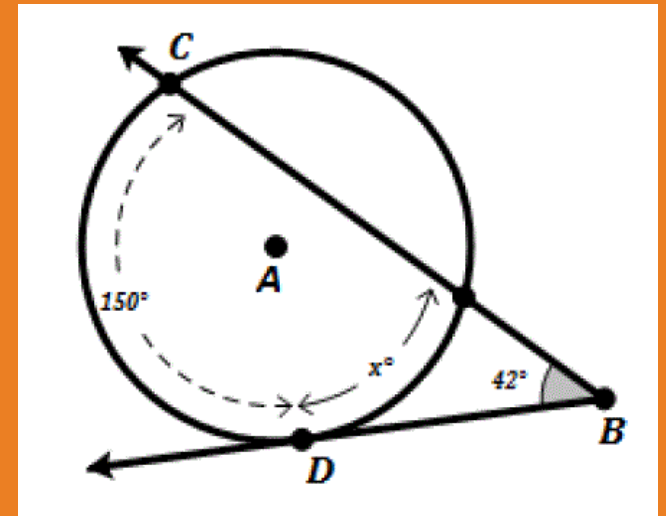
EX 1:



EX 2:



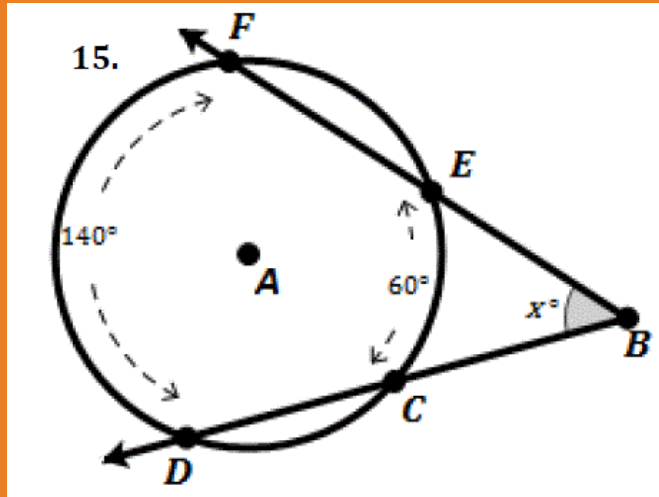
EX 3:





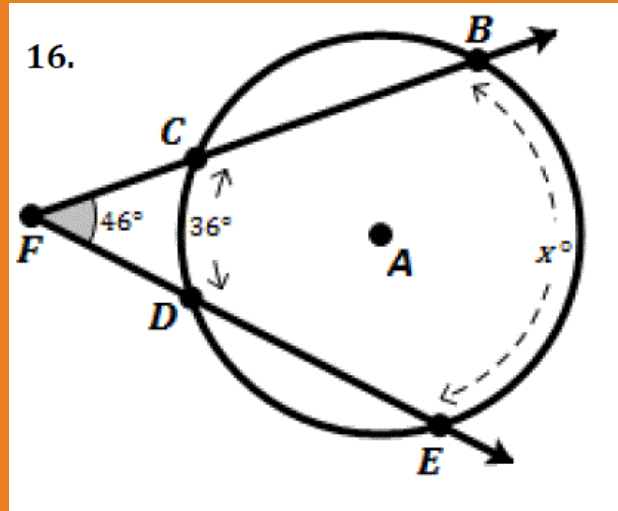
# ON YOUR OWN

EX 1:



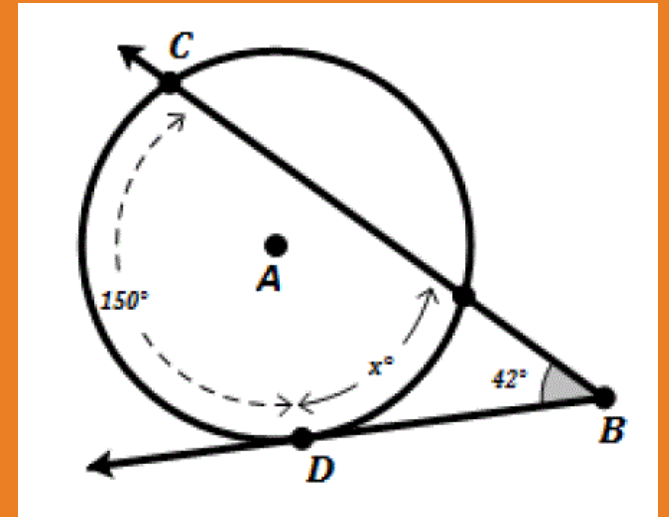
$$x = 40^\circ$$

EX 2:



$$x = 128^\circ$$

EX 3:



$$x = 66^\circ$$

# Classwork: Angles Outside of a Circle

[https://forms.office.com/Pages/ResponsePage.aspx?id=-x30L5-ROEmquMR\\_D8kYLWbKo5OjoN1FnNo7u2GDUMNUMkgwMIUyVjVHUElZVUFXWkxBTjhJUEVOVy4u](https://forms.office.com/Pages/ResponsePage.aspx?id=-x30L5-ROEmquMR_D8kYLWbKo5OjoN1FnNo7u2GDUMNUMkgwMIUyVjVHUElZVUFXWkxBTjhJUEVOVy4u)

